

REMARKS

Favorable reconsideration of this application is respectfully requested in view of the following remarks. Claims 11-30 are pending. Claims 21-30 are allowed. Claims 11-20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Meyer (5,502,493) in view of Bailleul (6,181,743). This rejection is respectfully traversed for at least the reasons set forth below.

Personal Interview Conducted

The Applicants wish to thank Examiner An for granting the personal interview conducted on May 14, 2004. During the interview, Meyer was discussed. Specifically, we discussed whether Meyer discloses that a motion vector for a subset of slices in a frame points to an identified subset of slices in another frame. Examiner An indicated that Meyer discloses dividing an image into slices as shown in figure 5, and that a motion vector for a macroblock of an MPEG encoded image, as is known in the art, points to another macroblock of an MPEG encoded image. Examiner An then concluded that Meyer inherently teaches motion vectors for a slice of a frame inherently point to a slice in another frame. The inherency of this teaching was vehemently disagreed upon. Specifically, the Applicants indicated that there is no teaching or requirement in Meyer of the claimed motion vectors. Furthermore, it was the burden of the Examiner to prove the teaching is inherent, and in fact the burden was not met because there is no requirement in Meyer to provide the claimed motion vectors. Instead, assuming Meyer uses a motion vector, Meyer more than likely would use conventional motion vectors that point to macroblocks of other frames rather than motion vectors that point to subsets of slices in other frames. It appears the teaching of a

motion vector for a subset of slices in a frame pointing to an identified subset of slices in another frame is being taken from the Applicants' invention rather than the prior art.

The combination of Meyer and Bailleul was also discussed. Bailleul was combined with Meyer to teach editing slices. The Applicants argued that Meyer only pertains to a decoder that uses multiple processors that operate concurrently to decode an MPEG-2 video signal and that there is no mention in Meyer of editing an image slice. The Applicants argued that Meyer and Bailleul are unrelated and thus it would not have been obvious to combine the references. Furthermore, the combination was only created based on the Applicants' invention rather than based on whether the combination would have been obvious to one of ordinary skill in the art. No agreement was reached.

Claim Rejections Under 35 U.S.C. §103

Claims 11-20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Meyer in view of Bailleul. The test for determining if a claim is rendered obvious by one or more references for purposes of a rejection under 35 U.S.C. § 103 is set forth in MPEP § 706.02(j):

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Therefore, if the above-identified criteria are not met, then the cited reference(s) fails to render obvious the claimed invention and, thus, the claimed invention is distinguishable over the cited reference(s).

To provide an understanding of the Applicants' invention and to further set forth the differences from the prior art, a description of an embodiment of the Applicants' invention is as follows. According to an embodiment, during compression (not decoding), motion compensation is constrained so that motion vectors *cannot point* away from or outside of data in a different, anchor (or reference) frame also representing the region of interest (but in the different frame). The purpose of this feature in the invention relates to the ability to extract limited amounts of compressed data for a sequence of frames. Conventionally, the entire sequence of frames is decoded in MPEG-2 to extract a region or object.

To take an example of this operation from the Applicants' specification, as multiple frames are sliced, an anchor frame will have both certain slices associated with a region of interest (e.g., the "ball" of Applicants' FIG. 2, and corresponding slices "A" and "C" of FIG. 21) and certain slices that are not associated with the particular region (e.g., slices "B" of Applicants' FIG. 21). When a frame is to be compressed as a "dependent" frame, i.e., with motion vectors that point to another, different frame for reconstruction, the motion search is limited for the dependent frame (e.g., the frame of Applicants' FIG. 14) such that motion vectors for data representing the ball in the dependent frame are constrained to necessarily *not point* to other unrelated regions in the anchor frame (e.g., the data within slices "B" from Applicants' FIG. 21). Otherwise stated with reference again to Applicants' example, the motion vectors for Applicants' slices "A" and "C" of Applicants' FIG. 15 are constrained such that they may not point to data in regions "B" of Applicants' FIG. 21. Through this operation,

Applicants' system may extract and decode only limited geographies within a frame (FIG. 14) by identifying corresponding slices in that frame (FIG. 14) and, on a limited basis, *just that anchor data* necessary to reconstruct the geographies of the dependent frame (FIG. 14), i.e., data within a subset of slices for the prior image frame (FIG. 21) used as a reference by the geographies of the dependent frame.

In this regard, the Applicants' invention relates to a way of decoding limited parts of a video sequence without decoding the entire frames of the entire sequence. The ability to decode limited parts of a video sequence is provided by using a motion vector for a subset of slices that point to a related subset of slices in another frame, such as an anchor frame. This saves a considerable amount of time, because a particular image in a frame may be edited without decoding an entire frame or without decoding entire frames in a group of frames related by motion vector. By contrast, the Meyer Patent calls for decoding every frame, in its entirety, in sequence, but for doling out image slices to parallel decoders as each frame is being decompressed. As is conventional for decoders, the entirety of any anchor or reference frames would have already been decompressed.

Independent claim 11 recites,

... the subsets [of image slices for the frame] being independently encoded from other image slices not in the subsets, such that any motion vectors necessarily point to an identified subset of another frame

Neither Meyer nor Bailleul teach or suggest motion vectors that necessarily point to an identified subset of another frame. The Official Action states on page 2 that the feature of a motion vector pointing to an identified subset of another frame is taught by Meyer in figure 5 and columns 8 and 9 and "inherency is emphasized".

Meyer has no structure, operation or suggestion that relates to Applicants' claim language. Rather, Meyer (especially at the portions of that patent cited by the Examiner) simply explains how slices for a single frame may be distributed to different decoders for decoding. Applicants are unable to understand why Meyer is relied upon beyond the fact that it mentions the word "slices." "Slices" are conventionally used in MPEG-2 processes, and conventionally may be distributed to parallel decoders (this is why FIG. 5 of the Meyer is listed as being "prior art").

In the personal interview, Examiner An clarified the rejection. In particular, the reference to figure 5 and columns 8 and 9 was provided to illustrate that Meyer teaches image slices. Examiner An further alleged that because Meyer teaches images slices, Meyer inherently teaches using motion vectors that point to a particular subset of slices in another frame. The Applicants respectfully disagree.

Firstly, it is the burden of the Examiner and not the Applicants to prove that the claimed feature is inherent. Secondly, to establish inherency, the Examiner must make clear that the missing descriptive matter is *necessarily present* in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, *may not be established by probabilities or possibilities*. The mere fact that a certain thing may result from a given set of circumstances is not sufficient." *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted).

As discussed in the personal interview and stated above, the claimed motion vectors are not inherent in Meyer. In fact, there is no teaching in Meyer that would require the use of motion vectors that point to an identified subset of slices in another frame. Unlike the Applicants' invention, which uses the claimed motion vectors to partially decode slices of

frames instead of requiring decoding of entire frames for editing, Meyer has absolutely no teaching with respect to editing frames. Furthermore, there is no suggestion in Meyer that links specific sets of slices in an anchor or reference frame (e.g., a prior frame) with specific sets of slices appearing in a dependent frame (e.g., a later, different frame), and decoding "only" the linked sets. Similarly, there is no disclosure in Meyer that requires certain slices from multiple frames to go to one and only one decoder, e.g., the round robin-distribution called for by Meyer feeds slices to a different decoder for a different frame. Thus, Meyer more than likely, if not explicitly, uses conventional decoding techniques for editing which do not use the claimed motion vectors. Examiner An is reminded that the mere possibility that Meyer may use the claimed motion vectors does not establish inherency.

Furthermore, none of the cited references teach or suggest this feature and thus it would not have been obvious to use this feature in Meyer. In fact, the Examiner agreed in a previous personal interview conducted on October 31, 2003, and as stated in that interview summary, that Bailleul, which was combined with Meyer in the rejection of claim 11, fails to teach this feature. It appears that the teaching of the claimed motion vectors is taken from the Applicants' invention rather than the prior art.

The rejection of claims 11-20 combines Bailleul with Meyer to teach the claimed selective editing, encoding, and insertion of new image slices into a bitstream. There are very substantial differences between both Bailleul and Meyer and the present invention. Neither reference deals with independently coded regions, such that select image slices may be decoded and edited without decoding data for other image slices. Furthermore, Bailleul is unrelated to the parallel decoding technique taught by Meyer, and thus it would not have been obvious to combine Bailleul with Meyer. Hence, neither Meyer nor Bailleul teach or suggest

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all the features of independent claim 11, and it would not have been obvious to combine Bailleul with Meyer. Accordingly, claims 11-20 are also believed to be allowable.

In addition, neither Meyer nor Bailleul teach or suggest the features of claims 15 and 16. Claim 15 is directed to receiving information including the identification of a subset of image slices associated with a particular object, and the information distinguishes the subset of image slices associated with a particular object from other image slices not associated with object. Claim 16, which is dependent on claim 15, is directed to a map for each frame. The Official Action, on page 4, states that these features are taught by Meyer and Sun. However, neither Meyer nor Sun teach or suggest a map or other information that distinguishes a subset of image slices associated with an object from other subsets not associated with the object.

Claim 20 is directed to inserting new information identifying slices into a frame header. The Official Action, on page 4, alleges this feature is taught by Bailleul which teaches inserting a logo. Bailleul, however, fails to teach or suggest inserting new information identifying slices into *a frame header*. For at least these reasons claims 11-20 are believed to be allowable.

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Conclusion

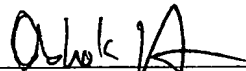
In light of the foregoing, withdrawal of the rejections of record and allowance of this application are earnestly solicited. Should the Examiner believe that a telephone conference with the undersigned would assist in resolving any issues pertaining to the allowability of the above-identified application, please contact the undersigned at the telephone number listed below. Please grant any required extensions of time and charge any fees due in connection with this request to deposit account no. 08-2025.

Respectfully submitted,

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